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Environmental Protection Agency

40 CFR Parts 51 and 52
Prevention of Significant Deterioration for Nitrogen Oxides; Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 51 and 52

[AD-FRL-3436-1]

Prevention of Significant Deterioration for Nitrogen Oxides

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: EPA is promulgating regulations under section 166 of the Clean Air Act (ACT) to prevent significant deterioration of air quality due to emission of nitrogen oxides. These regulations establish the maximum increase in ambient nitrogen dioxide concentrations allowed in an area above the baseline concentration; these maximum allowable increases are called increments. Increments for nitrogen dioxide were proposed in the Federal Register on February 8, 1988 (53 FR 3698). Today's action promulgates these increments for nitrogen dioxide. The intended effect of these regulations is to require all applicants for major new stationary sources and major modifications emitting nitrogen oxides to account for and, if necessary, restrict emissions so as not to cause or contribute to exceedances of the increments established today.

DATES: The revision to 40 CFR Part 51 will become effective October 17, 1989. The revisions to 40 CFR Part 52 will become effective November 19, 1990.

ADDRESSES: A docket, number A-87-16, containing information considered by EPA in the development of the promulgated regulations is available for public inspection between 8:00 a.m. and 4:00 p.m., weekdays, at EPA's Central Docket Section (LE-131), WIC Building, South Conference Center, Room 4, 401 M Street SW., Washington, DC 20460. A reasonable fee may be charged for copying.

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SUPPLEMENTARY INFORMATION: The contents of today's preamble are provided in the following outline:

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I. Summary of the Regulations

Pollutant to be regulated	Nitrogen Dioxide.
Type of regulation	Increment.
Area classification scheme	Classes I, II, and III.
Increments	Class I, 2.5 $\mu g/m^3$. Class II, 25 $\mu g/m^3$. Class III, 50 $\mu g/m^3$.
Averaging time	Annual.
Major source baseline date	Feb. 8, 1988.
Trigger Date (for minor source baseline date).	Feb. 8, 1988.
Effective Date (Part 51)	Oct. 17, 1989.
Effective Date (general) (Part 52).	Nov. 19, 1990.

II. Discussion of the Regulations

On February 8, 1988, the EPA proposed prevention of significant deterioration (PSD) regulations for nitrogen oxides under section 166 of the Act, 42 U.S.C. 7476 (see 53 FR 3698). The term nitrogen oxides refers to a family of compounds of nitrogen and oxygen. The principal nitrogen oxides component present in the atmosphere at any time is nitrogen dioxides. Combustion sources emit mostly nitric oxide, with some nitrogen dioxide. Upon entering the atmosphere, the nitric oxide changes rapidly, mostly to nitrogen dioxide. The conversion process continues, albeit much more slowly, producing nitric acid and nitrate salts. The February 8, 1988 notice proposed to revise 40 CFR Parts 51 and 52 adding increments for nitrogen dioxide to the existing PSD program. Increments establish the maximum allowable increases in ambient concentrations of a pollutant allowed in a PSD area, above applicable baseline concentrations in specified geographic areas, as a result of emissions from both stationary and mobil sources. After receiving and reviewing public comments on the proposed increment requirements, EPA is today promulgating final nitrogen dioxide increments.

The 40 CFR 51.166 regulations adopted today specify minimum rulemaking requirements for approvable State implementation plan (SIP) revisions. The 40 CFR 52.21 regulations adopted today specify the revisions that will eventually be applied by delegation (or directly by EPA) to areas which have not, within the specified time, submitted SIP revisions to EPA pursuant to today's 40 CFR 51.166 revisions.

The regulations adopted today stem in part from a lawsuit filed by the Sierra Club and others against the EPA Administrator in 1986 (*Sierra Club v. Thomas*, No. C-86-0971 WWS (N.D. CAL.)). In April 1987, the U.S. District Court for the Northern District of California directed the EPA Administrator to conduct a regulatory development program for nitrogen oxides under a specified schedule. The Court's schedule called for the publication of proposed regulations for nitrogen oxides by February 9, 1988, which was accomplished. The Court further directed the Administrator to promulgate final regulations on later then October 9, 1988 (see 658 F. Supp. 165). Today's action satisfies the order of the District Court.

A. PSD Increments

The PSD increments for nitrogen dioxide were developed pursuant to the provisions of section 166 of the Act. Specifically, this section requires the adoption of PSD regulations for nitrogen oxides (as well as for other pollutants) to provide "numerical measures against which permit applications may be evaluated, a framework for stimulating improved control technology, (and) protection of air quality values." Further, section 166 requires that the regulations include "specific measures at least as effective as" the existing increments established by Congress in section 163 of the Act for particulate matter and sulfur dioxide in meeting the goals and purposes of the PSD program.

The section 166 regulations for nitrogen oxides promulgated today are based on an ambient increment requirement for nitrogen dioxide as the numerical measure of significant deterioration in air quality. Nitrogen dioxide was selected as the pollutant for this regulation because it is the pollutant on which the national ambient air quality standards (NAAQS) for nitrogen oxides were based. Since the NAAQS are the measure of air quality, they are

also the most appropriate measure of changes in air quality, including significant deterioration. Nitrogen dioxide was also selected as the pollutant because nitrogen oxides emissions from stationary sources convert to nitrogen dioxide in the atmosphere.

The nitrogen dioxide increments follow the pattern enacted by Congress for the particulate matter and sulfur dioxide increments. These increments establish maximum increases in ambient air concentrations of nitrogen dioxide (expressed in micrograms per cubic meter ($\mu g/m^3$)) allowed in a PSD area over a baseline concentration. These increments are applicable to both stationary and mobile sources, and are implemented through a series of permit review requirements that are already in place for major new stationary sources or major modifications, as defined in 40 CFR Parts 51 and 52.

The nitrogen dioxide increment program also includes the three-tiered area classification system established by Congress in section 163 for increments of sulfur dioxide and particulate matter. Class I areas (including certain national parks and wilderness areas) were designated by Congress as areas of special national concern, where the need to prevent significant deterioration in air quality is the greatest. Consequently, the increment levels are most stringent in Class I areas. Class II areas are all areas not specifically designated in the Act as Class I areas. The increments of Class II areas are less stringent than the Class I increments and allow for a moderate degree of emissions growth. Class III areas are areas, originally designated as Class II, that have been redesignated by States where higher levels of industrial development and emissions growth are desired, and are subject to the least stringent increment requirement. There are as yet no Class III areas.

Today's notice establishes nitrogen dioxide increments based on the precentages Congress used to set the increments for sulfur dioxide and particulate matter. For example, the nitrogen dioxide Class I increment is set at 2.5 $\mu g/m^3$, a level of 2.5 percent of the NAAQS. It is based on the Class I sulfur dioxide increment, which is set at the same percentage (2.5 percent) of the sulfur dioxide NAAQS. Similarly, the Class II increment has been set at 25 $\mu g/m^3$ and Class III increment has been set at 50 $\mu g/m^3$. The EPA considers these increments to be "at least as effective as" the existing particulate matter and sulfur dioxide increments in preventing significant deterioration of air quality.

The NAAQS for nitrogen dioxide is expressed in 40 CFR 50.11 in parts per million and in $\mu g/m^3$ (i.e., 0.053 ppm or 100 $\mu g/m^3$). However, for consistency with the sulfur dioxide and particulate matter increments, $\mu g/m^3$ will be used throughout this preamble. The regulation incorporating these increments is also expressed in micrograms per cubic meter. It should be noted that these increments, like those for particulate matter and sulfur dioxide, are absolute limits. This means, for example, that a modeled impact of 25.1 $\mu g/m^3$ for a proposed new source would result in an exceedance of the Class II increment of 25 $\mu g/m^3$, while a modeled impact of 24.9 $\mu g/m^3$ would not. In neither case is the result "rounded off" to 25 $\mu g/m^3$.

The averaging time for the nitrogen dioxide increments is an annual average, based on the averaging period of the NAAQS for nitrogen dioxide. Unlike particulate matter and sulfur dioxide, for which there are both short-term NAAQS and short-term increments, there is no short-term nitrogen dioxide NAAQS. Therefore, there is no comparative basis to establish a short-term nitrogen dioxide increment that is equivalent to short-term sulfur dioxide and particulate matter increments. As a result, only an annual time period has been used in establishing increments for nitrogen dioxide.

In determining what increment levels could be considered "at least as effective as" the particulate matter and sulfur dioxide increments, EPA first looked to the example set by Congress in enacting the increments for particulate matter and sulfur dioxide. Then, EPA considered the ability of these and other alternative increments to stimulate new control technology and balance industrial growth with environmental concerns. In addition, a relative comparison of the known and potential adverse environmental effects of particulate matter and sulfur dioxide (the pollutants for which numerical increments have been established) to nitrogen dioxide was undertaken by EPA. Given the paucity of scientific data, a comprehensive, quantitative profile of these effects for the nitrogen dioxide versus sulfur dioxide and particulate matter increments could not be developed.

The EPA determined that the increments for nitrogen dioxide do provide a framework for stimulating improved control technologies. For new or modified sources seeking to locate in an area that is approaching the increment limit, the increments establish an incentive to apply more stringent control technologies in order to avoid violating the increment.

The EPA has also determined that the nitrogen dioxide increments adopted today will balance industrial growth with environmental concerns. It is estimated that no industrial source would be prevented from constructing in an area where the full increment is available, with one possible exception (i.e., a major chemical plant in an urban area with adverse meteorological conditions). In fact, EPA estimates most urban areas will be able to accommodate a number of nitrogen oxide emission sources. At the same time, the increments will provide a degree of protection to the environment by providing a mechanism for limiting the deterioration in air quality resulting from emissions of nitrogen oxides in all areas of the country subject to the PSD program.

The increments provide greater protection of air quality in Class I areas than in Class II areas by providing more stringent limits on increases in ambient concentrations of nitrogen dioxide. Beyond the increment requirements, section 165 of the Act gives the Federal land manager (FLM) in charge of specific Class I areas the authority and discretion to require the examination of the impacts of new sources on the air quality related values (AQRV's) associated with those areas. If these impacts are determined to be adverse, the reviewing authority may deny the application unless additional measures are taken to protect those AQRV's, even in instances where the increment is not violated.

The Class I increments established by Congress for particulate matter and sulfur dioxide vary with respect to their relative percentage of the NAAQS. In establishing the Class I increment for nitrogen dioxide, EPA determined that nitrogen dioxide more closely resembles sulfur dioxide than particulate matter in its characteristics and sources of emissions, and, therefore, sulfur dioxide was the model followed in setting these increments. As a result, the nitrogen dioxide increment for Class I areas has been set at the same percentage of the nitrogen dioxide NAAQS as the sulfur dioxide increment is of the sulfur dioxide NAAQS.

The EPA has concluded that the increment is the only one of the ten regulatory alternatives discussed in the 1980 Advanced Notice of Public Rulemaking (45 FR 30099) that currently provides a workable numerical measure and ultimately prevented. The EPA believes that the increment approach will best fulfill the goals of the PSD

program, as well as utilize the expertise already developed by State and local regulatory agencies in implementing increment-based programs for particulate matter and sulfur dioxide. This approach will require applicants for major new stationary sources and major modifications to model the area around the proposed source for increment exceedances. No support has been evidenced at the State level for any measure, other than direct application of the increments, for implementing the section 166 regulations for nitrogen oxides. However, since other methods might be preferable to some States, EPA remains open to other possible implementation approaches, provided that such approach (e.g., emissions density zoning) can be demonstrated to be as effective as direct application of the increments, as required by section 166. The EPA does not plan to issue any guidance on developing such alternatives. Interested States may develop alternatives on their own initiative and submit the proposed approach to EPA for approval.

B. Baseline Date

The term "baseline date," as used here and in the preamble to the proposed regulations, is somewhat of a misnomer, as it encompasses three different dates: (1) The major source baseline date, (2) the minor source baseline date, and (3) the trigger date for the minor source baseline date. The major source baseline date is the date after which construction of any major new or modified stationary source of nitrogen oxides emissions in a PSD area consumes increment. The minor source baseline date is the date after which emissions from all new or modified sources consume (or expand) increment, including emissions from major and minor sources. Once the baseline concentration is set, changes in actual emissions at any source consume (or expand) increment, regardless of whether the emissions changes are a result of construction. The minor source baseline date is the earliest date after a so-called "trigger date" on which a complete application for a major source or major modification is submitted for approval to a reviewing authority.

The date for both the major source baseline date and the trigger date proposed in the **Federal Register** was the date of proposal, February 8, 1988. The EPA has concluded that this date complies with the provisions of the Act while avoiding placing unnecessary administrative complexities on State agencies and permit applicants.

C. Implementation Date

There are two important time periods specified by section 166(b) of the Act that will affect the implementation of the increments for nitrogen dioxide. First, a 1-year time period is required by section 166(b) between the date of promulgation of these PSD section 166 regulations and the effective date of the regulation. Second, section 166(b) of the Act also provides States up to 9 months following the effective date of promulgation of the new regulations to prepare the necessary amendments to SIP's, and an additional 4 months (13 months total) for EPA to review the proposed SIP revisions prior to determining their approvability. Consequently, a period of up to 25 months (12 months from promulgation to the effective date plus 13 months for SIP approval) could elapse between the promulgation of these increments and their implementation.

The actual time which elapses between promulgation and implementation depends on two factors: The mechanism by which the PSD program is implemented in an area; and the action a State or area takes to enable it to implement the program. There are three mechanisms by which the PSD program is implemented. First, State can have its own PSD permitting procedures which have been approved by EPA as meeting the requirements of 40 CFR 51.166; this is termed a SIP-approved program. Second, where a State has failed to submit a PSD program meeting the requirements of 40 CFR 51.166, EPA can, pursuant to 40 CFR 52.21, delegate authority to the State to issue PSD permits in accordance with the Federal PSD regulations in 40 CFR 52.21; this is termed a delegated program. Finally, in a few areas of the country that have neither submitted an approvable program or sought a delegation, and in Indian lands where States lack authority to administer PSD requirements, EPA Regional Offices issue PSD permits directly, under 40 CFR 52.21.

Clearly, for SIP-approved programs, section 166(b) of the Act contemplated a 40 CFR 51.166 rule that would take effect 12 months after promulgation and allow States 9 months after that (21 months after promulgation) to submit revised SIP's incorporating the nitrogen dioxide increments. The EPA was then expected to approve or disapprove the SIP revision within 4 months, so the maximum time anticipated for implementation in SIP-approved areas is 25 months. The EPA will follow this schedule. Each State or area with a SIP-approved PSD program will have until July 17, 1990, to submit to EPA a SIP revision implementing the nitrogen dioxide increment rule. Revised SIP's may, of course, be submitted earlier, but EPA cannot approve any such revisions until October 17, 1989, the effective date of today's 40 CFR 51.166 revision. If a State with a SIP-approved program fails to submit SIP revisions which incorporate the nitrogen dioxide increment regulations within 21 months, EPA will proceed through rulemaking to create a Federal (but delegable) program for that State which embodies the necessary additional provisions as promulgated in 40 CFR 52.21.

It is evident from Part C of the Act generally, and the detailed schedule in section 166 of the Act in particular, that Congress anticipated that virtually all the PSD programs would be SIP-approved by the time of section 166 rulemaking. Such is, however, not the case; 18 States have delegated PSD programs and EPA still implements the PSD program directly in all or part of two States, as well as in Indian lands.

In proposing this rule, EPA requested comment on the following two implementation date options for States currently lacking SIP-approved PSD programs and for Indian lands:

(1) October 17, 1989, the same effective date as the 40 CFR 51.166 revisions, or

(2) November 19, 1990, the date by which the Act anticipated the program would be implemented.

Upon further consideration, EPA has concluded that the most appropriate and consistent approach to implementing this regulation is to follow the language of section 166 to the greatest extent possible. Specifically, section 166(b) provides up to 21 months from the date of promulgation of section 166 regulations for States to submit SIP revisions to EPA for approval. The EPA believes it appropriate to provide each State an opportunity to develop a SIP-approved program. Therefore, every State will be provided 21 months in which to develop and submit a SIP program for PSD, including the regulations required by today's action. This approach should also minimize differences in implementation dates between the States due to differences in PSD program mechanisms. Therefore, this regulation establishes the general effective date of today's 40 CFR 52.21 revisions as November 19, 1990.

It should be noted, however, that, as events actually unfold over this 25-month period, the revisions to 40 CFR 52.21 regulations may come into effect in some areas at times other than the generally applicable effective date. First,

a State might adopt and submit the necessary SIP revisions (perhaps as part of a comprehensive PSD permitting program) and EPA Might approve it, all between the 12-month and 25-month points. In that case, the revisions to 40 CFR 52.21 would not go into effect in that State at all. Second, EPA might advance the general effective date in the case where a State stipulates, in writing, that it does not intend to submit the necessary SIP revisions (thereby rejecting the 21-month SIP development time provided in the Act), and requests that EPA delegate to it (i.e., the State) the administration of the nitrogen dioxide increments program contained in § 52.21. Third, EPA might postpone the generally applicable effective date in the case of a State which submitted the necessary nitrogen dioxide revisions before the 21-month point but had not obtained EPA action on the submission before that effective date. In such a case, the postponement would last for the time it takes EPA to act on the submission. Finally, if an Indian tribe requests, in writing, an earlier effective date, EPA will consider advancing the effective date in accordance with the tribe's wishes. The EPA will make a case-by-case judgment based on all of the circumstances at the time of the request. In no event, however, would EPA make those revisions effective any earlier than the 12-month point.

Although implementation of the nitrogen dioxide increment program may not occur for up to 25 months after promulgation, EPA believes that it is prudent for States to be aware of the nitrogen dioxide increment consumption that is occurring during the interim period between the baseline date (February 8, 1988) and the implementation date. Determining increment consumption during this interim period will minimize the difficulties that would otherwise occur in retroactively determining the amount of increment consumption following actual implementation of the nitrogen dioxide increment regulations. Therefore, EPA urges States to have all permit applications for major new and major modified sources include a nitrogen dioxide increment consumption analysis. In the same vein, it would be appropriate for States to use the result of these analyses: (1) In evaluating BACT recommendations, and (2) to encourage sources which would consume most of, or exceed, an increment to mitigate their impact before construction.

D. Grandfathering Issues

Anticipating that today's amendments to § 52.21 will come into effect at some time in at least some areas (i.e., not all States will submit approvable SIP revisions within the specified 21-month period), EPA has clarified the applicability of those amendments to projects that have already received permits or filed applications by the time the amendments do take effect. The EPA has added to § 52.21(i) a paragraph that states that the amendments requiring a nitrogen dioxide increment consumption analysis would not apply to any project that has already filed a complete application, including any project that has already received a permit, before the effective date of the amendments. The EPA has added to § 51.166(i) a paragraph that a State-adopted plan may contain a like exemption based on completion of a PSD permit application. A State, of course, may elect to have a more narrow exemption or no exemption at all.

In making a decision on whether to include an exemption in the SIP, States should note that major new and modified sources will consume increment after the baseline date. If, when increment consumption is eventually determined, the analysis indicates that exceedances of the increment are occurring, the State must take corrective action. This could possibly affect the level of control at already-permitted sources. To avoid such situations, States may elect not to include a grandfathering provision in their regulations.

III. Major Issues

The proposed section 166 regulations for nitrogen dioxide increments were published in the **Federal Register** on February 8, 1988 (53 FR 3698). The preamble to the proposed regulations discussed the availability of the Technical Support Document and other reference documents used in the development of these regulations. These documents describe in detail the regulatory alternatives considered and the impacts of those alternatives. Public comments were solicited at the time of proposal, and copies of the preamble and the Technical Support Document were distributed to interested parties.

To provide interested persons the opportunity for oral presentation concerning the proposed increment regulations, a public hearing was held on March 23, 1988 at Research Triangle Park, North Carolina. The hearing was open to the public and each attendee was given an opportunity to comment on the proposed regulations.

The public comment period was from February 8, 1988 to April 22, 1988. Not counting requests for time extension and duplicate entries, fifty comment letters were received from industry; Federal, State, and local agencies; trade and regulatory associations and environmental groups. Most of the comment letters contained multiple comments. Each of the major issues raised by commenters is discussed below, along with EPA's consideration of the comments. Related comments made by different commenters are grouped together and responded to in summary form below. A more detailed response to the comments received is avilable in the docket. The major issues are:

(A) Pollutant chosen for increment;
(B) Regulatory alternatives;
(C) Class II increment;
(D) Class I increment;
(E) Mobile sources;
(F) Model facilities;
(G) Air quality modeling;
(H) Costs;
(I) Restrictions on siting;
(J) Ozone;
(K) Baseline date;
(L) Emissions banking; and
(M) Administration.

A. Pollutant Chosen for Increment

Two commenters stated that the PSD regulations for nitrogen oxides should not be limited in scope to ambient levels of nitrogen dioxide. These commenters stated that, by focusing on nitrogen dioxide, EPA has essentially excluded any mechanism or effective tool for assessing the impacts that will result from the conversion of nitrogen dioxide to a nitrate salt or nitric acid. Further, the commenters pointed out that EPA's focus on nitrogen dioxide is neither justified nor appropriate because section 166 of the Act speaks of nitrogen oxides. Finally, the commenters asserted that EPA has not justified the selection of nitrogen dioxide with reference to the specific goals and purposes of the PSD program, and that the protection of AQRV's (particularly against acid deposition and visibility impairment) requires the consideration and analysis of the impacts of all nitrogen oxides, not just nitrogen dioxide. The term AQRV refers to items of importance to a Class I area which can be affected by air pollutants. Visibility, water acidity, and specific plants and animals are typical subjects of AQRV analysis. The FLM is responsible for determining AQRV's for each Class I area.

The EPA's selection of nitrogen dioxide as the pollutant targeted by this regulation is consistent with congressional action in establishing sulfur dioxide as the increment for all sulfur compounds. Further, qualitative analyses of the impacts of nitrates (and

other nitrogen-containing compounds) in AQRV's are currently required under section 165(d)(2) as part of the consideration of PSD permit applications affecting, or potentially affecting, Class I areas (40 CFR 51.166(p) and 40 CFR 52.21(p)). The impacts on nitrates can therefore be addressed (albeit in a more qualitative manner): (1) Through the use of section 165 of the Act, which gives FLM's authority to review and comment on permit applications that would adversely affect AQRV's in Class I areas (40 CFR 51.166(p) and 40 CFR 52.21(p)), and (2) in Class II area by soil and vegetation analyses (40 CFR 51.166(o) and 52.21(o)).

One commenter stated that the nitrogen oxides PSD regulations should include a short-term increment, since the short-term effects addressed by the increment are not necessarily the same as those addressed by the annual NAAQS for nitrogen dioxide. This commenter stated that EPA should conduct a comparison of the effects of the nitrogen dioxide increment with the short-term sulfur dioxide increment in order to determine equal effectiveness.

As EPA stated in the preamble to the proposed regulation, there is no comparable basis on which to base a short-term increment for nitrogen dioxide. The use of the annual NAAQS as the basis of the increment is consistent with the approach taken by Congress with sulfur dioxide and particulate matter. Because there currently is no short-term NAAQS for nitrogen dioxide (which would define short-term air quality), there is currently no comparable basis for a short-term nitrogen dioxide increment.

B. Regulatory Alternatives

Several commenters stated that a PSD regulation for nitrogen oxides is unnecessary or should be based on the use of BACT, rather than on an increment approach, because of the current PSD requirement for stringent BACT. While EPA agrees that BACT requirements currently in place for nitrogen oxides certainly affect the amount of emissions at a proposed site, BACT cannot prevent a significant increase in ambient levels of nitrogen dioxide in areas where multiple facilities locate near one another. Further, section 166(c) requires the PSD program for nitrogen oxides to "provide * * * a framework for stimulating improved control technology." Under the increment program, as new sites are permitted they consume available increment. As the available increment is consumed, industry may be compelled to find more effective control measures than previously existing BACT in order to expand existing operations or to build new facilities, thereby stimulating improved control technology.

The EPA has reviewed other regulatory alternatives, as discussed in the preamble to the proposed rulemaking. The EPA determined, however, that use of BACT alone does not satisfy the requirements of the Act. While BACT is an important regulatory tool in limiting the emissions from single sources, it must (in the long term, and in consideration of the potential impacts of multiple sources) be coupled with an increment or some other regulatory mechanism is areas where emissions are increasing in order to prevent significant deterioration in air quality.

A few commenters suggested that increments should be established on a regional basis, rather than nationwide. There are at least two difficulties with regional increments that led EPA to reject this alternative. First, such increment would be difficult to develop and implement. Appropriate increment levels would have to be developed individually for each region based on air quality values, economic growth rates, and other characteristics of the region. Determining the boundaries of each region would also be difficult.

Second, there is neither precedent nor clear authority in the Act for developing regional increments. Both the provisions of the Act and the history of the development and implementation of the PSD program by Congress and EPA support the conclusion that the increments are intended to be nationwide in scope, rather than regional.

C. Class II Increment

Nearly all facilities affected by today's regulation would be located in Class II areas. Some of these facilities may be located relatively close to a Class I area, but all will have to comply with at least the Class II increment. The level of the Class II increment drew numerous comments.

Several commenters stated that the inclusion of mobile source emissions in the PSD analysis is inappropriate and could, in effect, make the nitrogen dioxide increment more stringent than the particulate matter and sulfur dioxide increments.

The EPA does not agree with these comments for two reasons. First, the requirement that the effect of mobile source emissions on increment consumption to be examined is not applicable only to this nitrogen dioxide increment. Emissions from mobile sources, however, account for a much greater proportion of the ambient concentration of nitrogen dioxide than for either sulfur dioxide or particulate matter, so it is understandable that the provision may seem new. Nevertheless, this requirement is in the current PSD regulations for sulfur dioxide and particulate matter (see 40 CFR 52.21(o) for provisions relating to area source analyses), and no acceptable rationale for altering the rule was provided.

Second, EPA's analysis indicates that, under some circumstances (e.g., urban areas), the decreasing contribution of mobile sources to nitrogen dioxide concentrations will actually improve nitrogen dioxide air quality (albeit temporarily) as controls on nitrogen oxides emissions from mobile sources result in reductions in mobile source emissions. This decrease in mobile source emissions should effectively expand the nitrogen dioxide increment available for other sources. As a consequence, for at least an estimated 5 to 10 years, the inclusion of mobile sources in the increment analysis for nitrogen dioxide should not make this regulation more stringent or the siting of industrial facilities more difficult, overall, than the existing increments for particulate matter and sulfur dioxide.

Several commenters, while stating that the nitrogen dioxide increment is more stringent than the particulate matter and sulfur dioxide increments, pointed out that congressional acid rain proposals call for nitrogen dioxide reductions that are one-half to one-third the reductions required for sulfur dioxide. This, they felt, suggests that Congress recognizes that sulfur dioxide has a greater environmental impact than nitrogen dioxide. Consequently, they argue that the nitrogen dioxide increment could be set at a level two to three times greater than the sulfur dioxide increments, measured as a percent of the NAAQS.

The EPA disagrees for a number of reasons. First, the acid rain legislation is in the proposal stage at this time. It would not be prudent, or permissible, for an agency to rely on proposed legislation in promulgating regulations. Second, even if the proposals are enacted, they are designed to address air quality and programmatic goals that are different from those addressed by the PSD increment program. The acid rain bills are designed to place limits on the emissions of pollutants that result in a specific environmental problem. Consequently, they may differentiate between pollutants based on various factors (e.g., control technology costs). The PSD program was developed with a different goal. It is intended to protect public health and welfare against actual

or potential adverse effects notwithstanding compliance with the NAAQS; protect and enhance air quality in national parks and other areas of special concern; insure that economic growth will occur in a manner consistent with the preservation of existing clean air resources; assure that emissions from one State will not interfere with the PSD plan of another State; and assure that decisions to increase air pollution are made only after careful evaluation of the consequences and public participation in the decisionmaking process (see section 160 of the Act). Consequently, the fact that Congress may be considering dissimilar control rates for sulfur rates for sulfur dioxide and nitrogen dioxide emissions for acid rain reduction does not imply that the same ratio should be adopted for PSD purposes.

Numerous commenters stated that the increments for nitrogen dioxide should be based on an evaluation of the environmental effects of nitrogen dioxide compared to those effects caused by particulate matter and sulfur dioxide. As indicated above, EPA believes that in adopting section 166, Congress was primarily concerned with preventing significant increases in ambient pollutant concentrations. Nevertheless, in its determination of "at least as effective as," EPA considered a variety of factors. These included the potential for the stimulation of new control technology, the possibility of adverse economic impacts on sources, and the potential or possible adverse effects of the pollutant in question.

When looking at the potential adverse effects of nitrogen dioxide versus sulfur dioxide and particulate matter, EPA undertook two analyses: (1) A comparative assessment of the potential for formation of acid compounds and particulate matter from nitrogen dioxide and sulfur dioxide, and (2) an analysis (which is discussed later in this document) of the potential for the nitrogen dioxide increments to limit an area's ability to attain the ozone NAAQS in areas where higher nitrogen oxides emissions might reduce ozone concentrations.

The comparative analysis was performed by EPA to determine the relative amounts of acidic compounds and particulate matter that could theoretically be generated from comparable concentrations of nitrogen dioxide and sulfur dioxide in the ambient air. It was concluded that, on an air quality basis, the conversion of roughly equivalent fractions of the ambient standards for nitrogen dioxide and sulfur dioxide to acid would produce comparable amounts of acid. The analysis also showed that comparable amounts of particulate matter would be generated if equivalent fractions of the standards were converted to salts. Thus, when compared to sulfur dioxide on the basis of the formation of either acids or salts (nitrate or sulfate), the nitrogen dioxide Class II increment of 25 $\mu g/m^3$ was found to be comparable to the sulfur dioxide Class II increment of 20 $\mu g/m^3$. These analyses have been included in the public docket for this rulemaking.

This analysis did not attempt to assess factors such as pollutant fate, transport, or transformation. Rather, it assumed in each case that all the sulfur dioxide or nitrogen dioxide present would be converted to acid or salts. (Other pollutants such as sulfuric acid, nitric acid, and peroxacetyl nitrate (PAN) can form from the emitted nitrogen oxides and sulfur dioxide and can coexist in the atmosphere with nitrogen dioxide and sulfur dioxide.) In addition, the analysis was not able to consider possible benefits (e.g., some of the acidic transformation products of nitrogen dioxide may be beneficial to the environment, at lower deposition rates, by stimulating terrestrial plant growth). Given that the uncertainty ranges associated with benefits analysis are too broad to permit their use as a tool to distinguish between comparatively narrow differences in options, EPA determined that it could not comprehensively compare the different effects due to sulfur dioxide and nitrogen dioxide to determine nitrogen dioxide increments "at least as effective as" those for sulfur dioxide.

In the absence of sufficient information as to the relative adverse effects of sulfur dioxide versus nitrogen dioxide, and with the only available comparative results indicating relative equivalence of the sulfur dioxide and nitrogen dioxide increments, EPA believes that it is reasonable to base its evaluation of significant deterioration on the percentages of the NAAQS, as Congress did for sulfur dioxide and particulate matter.

One commenter recommended that, where sources of nitrogen oxides outnumber those of sulfur dioxide, the proposed increment should be expanded to allow for continued economic expansion. On the other hand, another commenter suggested that increments for Class II areas should not be set at levels that specifically provide for industrial expansion, but that industrial expansion should be addressed through the use of Class III area designations.

The Class II nitrogen dioxide increments adopted by EPA followed the approach established by Congress in setting the Class II sulfur dioxide increment level to allow for continued expansion of emissions from sources, but within acceptable limits. Analyses were conducted by EPA to determine the projected impacts on industrial growth that would result from the promulgation of various increments. Based on these analyses, EPA has concluded that the impact on industrial growth will not be significant for a 25 $\mu g/m^3$ increment. As noted, in instances where States wish to allow higher levels of growth in industry and emissions than permitted under the Class II increments, the PSD program provides procedures for States to designate Class III areas that would have less stringent increment requirements.

Other commenters suggested that setting the increment at 25 percent of the annual NAAQS for nitrogen dioxide is "unfounded, arbitrary, and simplistic;" that the percentages used to establish the increment should be based on the secondary NAAQS for particulate matter, rather than the primary NAAQS; and that the increment should be set at a level equal to the NAAQS.

Section 166 of the Act requires the nitrogen oxides regulations to be "at least as effective as" the sulfur dioxide and particulate matter increments enacted by Congress. As previously discussed, the EPA believes that basing the increments for nitrogen dioxide on the same percentage of the NAAQS as was used for the statutory increments is a reasonable approach to complying with this requirement, because it uses the same method Congress used. When Congress established the increments for particulate matter and sulfur dioxide, it generally calculated them as a percentage of the lower of the primary or secondary NAAQS for each averaging time. In the specific case that one commenter has raised, the annual average particulate matter increments were set by Congress at levels that were 8.3, 31.3, and 61.7 percent of the then annual average secondary NAAQS, which was based on total suspended particulate (TSP). However, as noted in those standards, the annual average secondary NAAQS was "a guide to be used in assessing implementation plans to achieve the 24-hour standard." Since the annual average particulate matter increments were established at levels that were 6.7, 25.3, and 49.3 percent of the then annual average primary NAAQS, it is reasonable to assume that Congress simply ignored the secondary guide.

The EPA, in turn, followed that approach for the nitrogen dioxide increments. Since the primary and secondary nitrogen dioxide NAAQS are the same, in effect the Class II nitrogen dioxide increment is based on 25 percent of either the primary or secondary nitrogen dioxide NAAQS. The EPA does not agree with the suggestion that the increment be set at a level equal to the NAAQS, since that would not provide clean air areas of the country with any of the protection against significant deterioration of air quality that is the stated purpose of the PSD provisions set forth in section 166 of the Act.

D. Class I Increment

The level of the Class I increment will, of course, affect any source that may locate within the boundaries of the Class I area but, more commonly, will affect those sources located in Class II areas which impact ambient nitrogen dioxide levels in a nearby Class I area. The stringency of the Class I increment caused concern primarily to commenters representing industry.

Two commenters stated that the Class I increment did not necessarily have to be set at 2.5 percent of the NAAQS for nitrogen dioxide, since Congress based the particulate matter and sulfur dioxide increments for Class I areas on different percentages of the NAAQS for those pollutants. These commenters suggested that EPA consider the impacts of nitrogen oxides on visibility or vegetation in selecting the size of the Class I increment. Other commenters suggested a higher percentage of the nitrogen dioxide NAAQS for the Class I nitrogen dioxide increment than Congress used for either particulate matter or sulfur dioxide. They believed less stringent increments could be justified because of differences they perceived in the environmental impacts of nitrogen dioxide compared to particulate matter and sulfur dioxide. One commenter recommended a more localized Class I increment, based on the unique AQRV's of the specific Class I area.

The EPA has concluded that the proposed Class I increments are consistent with the requirements of the Act and with previous congressional action in setting increments. In the PSD program, AQRV's are those environmental, social, aesthetic, and economic characteristics of Class I areas that are dependent upon existing ambient pollutant concentrations. Inasmuch as the PSD program is designed to define and to prevent significant deterioration in air quality on a nationwide basis, the increments themselves do not address the variability in local AQRV's associated with specific Class I areas. Flexibility to address specific AQRV concerns or to grant waivers when AQRV's would not be threatened is provided to the FLM's and EPA during the process of permit review by section 165 of the Act (40 CFR 51.166(p) and 40 CFR 52.21(p)). Congress set low Class I increments for particulate matter and sulfur dioxide, and provided a mechanism in section 165 of the Act for the denial of a PSD permit where these AQRV's are adversely impacted, even when the Class I increment would not be violated. Today's action establishes a similarly stringent Class I increment for nitrogen dioxide using the sulfur dioxide increment established by Congress as a model. Sulfur dioxide, rather than particulate matter, was chosen as a model because, as noted earlier, nitrogen dioxide sources (primarily combustion sources) and emissions characteristics more closely resemble those of sulfur dioxide.

One commenter warned that the proposed Class I increment would constrain the future development of oil and gas reserves, affecting prices and supply. This commenter was also concerned with the impact analysis developed by EPA, thinking that enhanced oil recovery projects will be more prevalent in the future than assumed in the EPA analysis. These projects (e.g., oil shales, tar sands, steam floods for heavy crudes), which will use fuel-burning equipment, are large sources of nitrogen oxides emissions. The most likely sites for these projects are in the Rocky Mountain Region and California, possibly close to Class I areas.

The EPA's analysis of existing sources located near Class I areas indicates that none of these sources would have been seriously constrained by the nitrogen dioxide increment. In large part, this is because relatively few nitrogen oxides sources have located near Class I areas and there has been little overlap in the impact areas of different sources. Assuming these conditions continue, future siting of energy-related sources, or any other sources, can generally be contrained only if the entire increment is consumed by an individual source. Even then, the FLM, if so convinced, can certify that a source in the vicinity of a Class I area will have no adverse impact on AQRV's, allowing the permit to be issued. The analysis mentioned above also indicates that exceedances of the short-term sulfur dioxide increments are more likely to be constraining for these source categories than the nitrogen dioxide increment being promulgated today.

E. Mobile Sources

One commenter stated that mobile source emissions should not be included in the increment analysis because such emissions are not significant contributors to ambient nitrogen dioxide concentrations. The EPA has concluded that, although individual mobile sources may not be significant sources of nitrogen oxides emissions, in the aggregate they are very significant sources, particularly in urban areas. It is estimated that mobile sources produce, nationwide, almost half of all nitrogen oxides emissions. Consequently, the regulations promulgated today continue to require the inclusion of mobile sources in increment analyses.

The rationale for the inclusion of mobile source emissions in increment analyses is that the Act indicates Congress was concerned that increment consumption reflect actual ambient concentrations. The declaration of purpose in section 160 of the Act addresses the potential for increased air pollution without distinguishing between mobile and stationary sources. Although the operative provisions of Part C undoubtedly are geared toward stationary sources, the statute does not suggest that either States or EPA can ignore air quality deterioration caused by mobile sources. This argues strongly that EPA should continue to include mobile sources (as well as other minor and area sources) as increment-consuming sources of emissions.

A number of commenters stated that mobile sources should be excluded from the nitrogen dioxide increment analysis because: (1) Of the difficulty in (a) assessing the effectiveness of mobile source nitrogen oxides emission controls, (b) determining mobile source emissions over an area, and (c) determining the amount of increment consumed or expanded by mobile source emissions; (2) mobile sources have not been included in these analyses in the past for particulate matter and sulfur dioxide; (3) it is generally "impossible" to determine mobile source emissions growth for allowable emissions because of variables of highway design capacities, residential growth, or small business growth, especially considering local variation in weather conditions; and (4) the inclusion of mobile sources in modeling will reduce the accuracy of the model and increase analysis costs so that they will exceed the benefits derived from the inclusion of mobile sources.

In contrast to the commenters' concerns, EPA believes it is appropriate to include mobile sources in the increment program and that mobile source emissions will not unduly complicate the nitrogen dioxide increment program. This rule is not the first regulatory action that requires determining the emissions from mobile sources over an area. For instance, estimates of mobile source emissions are also made for SIP demonstrations of reasonable further progress and attainment, and for other regulatory programs. These techniques are well-documented, and have not posed undue burdens on the implementation of these regulatory programs. Therefore, it is not anticipated that their use in the PSD program for nitrogen dioxide increments will be unreasonably complex. In order to clarify the application of these procedures to the increment analysis for nitrogen dioxide, however, EPA will develop additional guidance in the use of these emissions estimating procedures for PSD applications.

The EPA does not feel that the inclusion of mobile sources in the analysis of nitrogen dioxide increment consumption should place too great a burden on PSD applicants. Currently, applicants obtain data on stationary source emissions from States and use this data to model increment consumption. Similarly, data on vehicle miles traveled in the vicinity of a proposed new or modified major source could be obtained from the State and used to model increment consumption (or expansion) by mobile sources. If a State has no data available on traffic patterns in the vicinity of the source, but has other data available or believes mobile source data from other studies or reports to be more accurate than State data, the use of such alternative data may be approvable on a case-by-case basis. Further, if a new PSD permit applicant is proposing to locate in close proximity to a previous PSD permittee, the new application may incorporate the previous applicant's mobile source analysis if the previous application is less than one year old (or the data have been updated by the new applicant), covers the same general impact area, and no new mobile source data have become available.

A number of commenters said it is inappropriate to make regulations specifying the use of the *Mobile 4* emission model when that model has not been made available. In response to this comment, EPA has changed this requirement to state that preliminary analyses should be made with the latest version of the *Mobile* model. Revisions to the *Mobile* model are announced in the **Federal Register.**

Commenters claimed that including mobile source emissions in increment analyses will constrain the siting of stationary sources. Based on the results of an analysis conducted by EPA, a reduction in emissions from mobile sources will likely occur in many urban areas until the mid-1990's, resulting in an expansion of the increment in those areas. For this reason, the inclusion of mobile source emissions in the increment analysis for nitrogen dioxide should not constrain industrial stationary source growth during that time period.

Commenters also stated that EPA's conclusion that projected reductions in mobile source emissions will result in expansion of the increment is erroneous and commented that, in high growth areas, mobile sources may consume increment even though individual auto emissions may be decreasing. One commenter cited Texas Air Control Board (TACB) analyses that show that nitrogen dioxide levels in urban areas have stayed the same throughout the 1980's, rather than decreasing with reductions in vehicle emissions.

The EPA has reviewed the previously mentioned TACB ambient monitoring data study. The TACB results do not necessarily mean that ambient nitrogen dioxide levels from mobile source emissions are not decreasing. One possible conclusion from that study would be that increases in nitrogen oxides emissions from stationary sources are compensating for the decreasing mobile source emissions, in at least some urban areas, keeping ambient concentrations of nitrogen dioxide level.

Another commenter stated that EPA should do an impact analysis to evaluate the impact of mobile source growth in urban Class II areas on adjacent Class I areas. The contributions of nitrogen oxides emissions from mobile sources to ambient nitrogen dioxide concentrations were analyzed by EPA for a high growth urban area during the development of the proposed regulations. This analysis indicated that mobile source contributions to ambient nitrogen dioxide concentrations have been decreasing in urban areas and should continue to decrease until the mid-1990's. With a baseline date set at February 8, 1988, this means that mobile source emission controls in urban Class II areas adjacent to Class I areas will, in most cases, result in an expansion of increment in Class I areas as well as in Class II areas. Should mobile source emissions increase again after 1995, no adverse impact on Class I areas would be experienced unless the entire reduction in emissions after the baseline date is offset by new emissions.

One commenter stated that EPA should address the maintenance of ambient nitrogen dioxide levels in urban areas affected by mobile sources after 1994. This commenter pointed out that the expansion of the increment created by improved mobile source emission controls can be considered temporary, so EPA should rethink whether this reduction should be considered an increment expansion that is "available" for industrial expansion, or whether this temporary expansion of the increment should be ignored.

The EPA retains its rationale from the proposal that there may be several circumstances in which an area might experience a temporary expansion of the available increment. Those include production decreases resulting from economic conditions as well as improved emission control technologies, as is the case with mobile sources. In each of these instances, however, States must make decisions regarding the management of their air quality resources and the allocation of the increment. In this sense, the increment expansion from reductions in mobile source emissions is not different from other issues regarding the management of available increment. With these regulations, EPA does not propose to place constraints on how States choose to manage the increment. If, however, stationary sources are allowed by the State to consume the expanded portion of the increment and mobile source emissions do increase at some future date, the State will be required to make the adjustments necessary (e.g., controls on existing sources) to maintain future compliance with the increments.

F. Model Facilities

In the development of this regulation, hypothetical facilities were modeled to analyze the cost effectiveness of various controls and to project the emissions levels that could be anticipated from implementation of those controls.

Comments were received on the various analyses that EPA conducted to develop the proposed regulations. These comments compare hypothetical plants to actual plants and identify potential inconsistencies between them. In some instances, EPA has reevaluated its selection of model facilities, or performed additional analyses in response to the comments received.

Several commenters stated that the size of the model utility power plant

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chosen for analysis is smaller than those that are typical of the electric utility industry. In the model facility analysis, EPA evaluated a 500 megawatt (MW) utility boiler, while the commenters assert that a typical utility boiler is in the 1000 to 2000 MW size range. These commenters expressed concern that the larger utility boiler could not comply with the proposed nitrogen dioxide increment requirement.

In response to this comment, EPA reexamined the selection of the model utility boiler evaluated in the development of the proposed increments. In examining 40 PSD permit applications for new coal-fired utility plants in the new source review (NSR) data base, only 2 of 72 individual boilers were found that were larger than 1000 MW in capacity. The other utility boilers in the NSR data base ranged from 300 to 800 MW in size, and averaged approximately 500 MW. The EPA assumption of 500 MW is also consistent with the typical power plant boiler analyzed by the Electric Power Research Institute, the Department of Energy (DOE), and the Tennessee Valley Authority. The DOE also projected that future utility boilers would typically be approximately 500 MW, based on projections submitted by the utility industry. Consequently, EPA believes that the selection of a 500 MW boiler is appropriate for the model utility boiler analysis.

The EPA's model facilities analysis indicates that a utility boiler in the 1000 MW size range would be able to comply with the increment requirements, except under the most adverse circumstances. Some of the commenters cited a table in the Technical Support Document (Volume I, Table 2) to support their contention that these facilities would violate the increment. It should be noted that the figures given in this table are for uncontrolled sources and do not include the effectiveness of emission controls that could be used to reduce these emissions. Although a 1000 MW utility boiler was not examined in the initial analysis, EPA considers it reasonable to expect that the technology required to meet a 25 $\mu g/m^3$ increment on a 1000 MW boiler would be similar to that required to meet a 15 $\mu g/m^3$ increment for a 500 MW utility boiler which was analyzed by EPA. Based on this assumption, there are demonstrated or developing control technologies (e.g., overfire air, "low-NO_x" burners, reburning, selective catalytic combustion, selective noncatalytic reduction) available for reducing nitrogen oxides emissions from utility boilers to these levels. Using these technologies, the increment would be constraining on the operation of a 1000 MW utility boiler only if it was located in an urban area and under the most restrictive meteorological conditions used in EPA's analyses.

Several commenters stated that internal combustion (IC) engines in the model facility for gas compressor stations are not typical in either size or control technology. They claimed that typical natural gas compressor stations have multiple IC engines in the 800–1500 horsepower range, rather than the three 4500 horsepower IC engines used in the model plant. This error, they feel, would result in an underestimation of costs of controlling emissions from this type of source. One commenter stated that prestratified charge and nonselective catalytic reduction cannot be used on a 4500 horsepower (hp) gas compressor engine, as indicated in the model plant analysis, and that both prestratified charge combustion and nonselective catalytic reduction can only be used on smaller rich-burn engines.

In response to these comments, EPA reviewed the size of the IC engines selected for this model facility, as well as the control devices applied to each. First, it was found that the 4500 hp IC engines are more typical of gas compressor stations than the multiple, smaller IC engines mentioned by the commenter. Second, in designing new or modified compressor stations, applicants can comply with the increment through the use of larger IC engines, or by selecting stationary gas turbines which have negligible control cost impacts.

In order to examine the impact of the increment on the multiple small engines the costs of precombustion modification controls were determined for smaller engines (i.e., 1000 hp) of equal aggregate capacity and compared to the costs for the same controls on the larger engines analyzed in the model facility analysis. This analysis shows the costs of control for the 1000 hp engines are 2 to 3 times the costs of control for the 4500 hp engines. In order to determine the significance of these increases in costs, their impacts on product prices were calculated. At the 25 $\mu g/m^3$ increment level, the maximum projected product price was unchanged for compressor stations located in rural areas and increased to 1.2 percent in urban areas. Although greater than the 0.4 percent increase in product prices for the model facility reported in the original analysis, these product price impacts are still less than the 5 percent significance level used to classify regulatory actions as major. Moreover, they do not reflect available mitigating measures that could dampen the cost increases and subsequent price effects.

For the 1000 hp engine, the costs of prestratified charge combustion were compared to the costs of precombustion modification. With prestratified charge control technology, the total annual costs and cost effectiveness are less than the costs for precombustion modification, due the decrease in fuel use associated with prestratified charge. Although this decrease in fuel use may not be present in all instances, it is clear that the costs of prestratified charge controls on a 1000 hp engine will be no greater than the cost for precombustion modification.

Finally, the EPA reviewed the applicability of prestratified charge combustion and nonselective catalytic reduction to larger rich-burn engines. The EPA agrees with the commenters that prestratified charge combustion is only used on small engines. The preamble and Technical Support Document prepared for the proposal of these regulations erroneously described the technology analyzed for larger IC engines (i.e., 4500 hp) as prestratified charge combustion. In fact, the actual technology analyzed was precombustion modification. Nonselective catalytic reduction, however, is offered by vendors on engines of up to at least 10,000 hp. Consequently, analysis of this technology as applied to the model 4500 hp IC engine was appropriate.

One commenter stated that surface mining operations were not considered in EPA's analyses of the potential impacts of the proposed increment. This commenter submitted an air quality analysis of a theoretical surface coal mine to support the contention that application of the Class I and Class II increments to surface mining presents potential compliance problems.

The EPA has reviewed the materials submitted by the commenter. This review revealed that certain assumptions in the commenter's analysis result in an apparent overestimation of the impacts of surface mining operations on consumption of the nitrogen dioxide increment. The information submitted by the commenter was based largely on emissions from diesel engines and relied on outdated emission factors. In addition, vehicle miles traveled by the diesel equipment used at the mine were very high when compared with previous EPA studies of actual surface mining operations.

Assuming more reasonable estimates and using currently available emission factors, EPA estimates that the nitrogen oxides emissions and the impacts on

ambient nitrogen dioxide concentrations would be approximately 12 percent of the values reported by the commenter. Although, in some instances, the EPA analysis indicates that the off-site impacts of the mining operation could exceed the increment, these impacts could be reduced below the increment level through the use of more advanced emission control technology on diesel engines or reconfiguration of sources within the facility to reduce off-site impacts (e.g., placing the main haul road farther from the property line). If located very close to a Class I area, such a source does have the potential to cause increment exceedances. However, the siting of surface mines close to Class I areas has in the past been constrained more by aesthetic and visibility issues than by increments such as those for particulate matter, and EPA believes that this will continue to be the case in the future.

G. Air Quality Modeling

Several commenters stated that EPA air quality models predict concentrations higher than would actually occur. The use of these models in the nitrogen dioxide increment determination, they feel, would result in faster apparent consumption of the increment.

The EPA believes the issue of model overprediction should be viewed in two parts: whether the EPA models overpredict when determining the impact of a nonreactive pollutant, and whether the models overpredict when determining nitrogen dioxide increment consumption. On the first issue, the EPA does not agree that models such as the industrial source complex (ISC) model overpredict when determining the impact of a nonreactive pollutant. In fact, the downwash algorithm was recently modified because studies have shown that the previous algorithm underpredicted concentrations for sources with short stacks. As to the second issue, EPA recommends a three-tiered screening model approach for determining nitrogen dioxide annual averages. The EPA agrees that the first level screening technique (assuming that all the nitrogen oxides are emitted as nitrogen dioxide) provides a high estimate of nitrogen dioxide ground level concentrations. There is no simple, accurate model for determining the rate of nitric oxide to nitrogen dioxide conversion. After the initial screen, if more accurate modeling results are needed, the ozone limiting method can be applied to the annual nitrogen dioxide estimate from point sources as a second level screen, or for each hour of the year as a third level screen. The ozone limiting method is a simple method that attempts to take into account the conversion of nitric oxide to nitrogen dioxide in the atmosphere. Its use will result in a lowering of the modeled maximum ground level concentrations. Therefore, EPA feels that the choice between simple overpredictive models and more complex, but more accurate, models available to the source provides a solution in possible cases of overprediction.

One commenter provided an analysis to show the impact of the overpredictive character of the initial, first level screen. That analysis was not credible, however, because of the use of atypical emission parameters that were then modeled as though the releases occurred near the edge of the property boundary, thus greatly increasing the impact of these emissions. Also, the facility was modeled on the assumption that it operates on a 24-hour basis, thereby including a large number of stable and low wind speed conditions that result in higher ground level concentrations. These conditions are less likely to occur during the day. Until experience with these screening methods demonstrates otherwise, EPA will continue to recommend the three-tiered modeling approach for obtaining annual average estimates of nitrogen dioxide from point sources. On a case-by-case basis, however, EPA will consider other modeling techniques proposed by permit applicants to more accurately assess increment consumption.

Several commenters stated that EPA does not have sufficient guidance on modelling long-term concentrations from mobile sources. The commenters said that there is a lot of uncertainty associated with modeling nitrogen dioxide emissions from mobile sources with the industrial source complex long-term (ISCLT) model and are concerned that such modeling will substantially overestimate actual concentrations.

The ISCLT model is recommended for determining imapcts from mobile source emissions when localized areas of high ambient nitrogen dioxide concentrations are expected, because it is the only long-term guideline model that can be used for these sources. An assessment of the performance of the ISCLT model for these applications is not now available. The ISCLT model will, of course, continue to be evaluated as experience is gained with these applications. For most urban area analyses, localized areas of high ambient nitgrogen dioxide concentrations need not be considered, and mobile sources can be modeled as area sources using the climatological dispersion model (CDM) as a guideline. For determining nitrogen dioxide increment consumption, these models overestimate impacts because they do not account for nitrogen dioxide chemical transformations. When combined with the ozone limiting method, however, these models will result in less overestimation of ground level nitrogen dioxide concentrations.

Several commenters said that existing models are inappropriate for reactive pollutants at extended distances from the source and for long-term periods modeling of reactive pollutants is complex and burdensome and, given the reactive nature of nitrogen dioxide, sophisticated photochemical transport and dispersion models are requred for realistic analysis of increment consumption. The commenters conclude that EPA must address the long-range modeling issues for reactive pollutants before a standard such as the 2.5 $\mu g/m^3$ Class I nitrogen dioxide increment can be implemented.

The EPA agrees with the commenters that models to account for the long-range transport of reactive pollutants, such as nitrogen dioxide, are not fully developed. The chemistry involved in the modeling of several merging and background sources emitting nitrogen oxides can become very complex, as can defining meteorological conditions over the distances and time scales associated with long-range transport. Thus, applying a long-range transport model can be a highly complex and very expensive undertaking. However, EPA neither recommends nor requires that applicants perform this type of analysis for the purpose of complying with air quality standards and increments.

Some commenters stated that there is insufficient guidance available for calculating long-term concentrations for point and area (i.e., mobile) sources in complex terrain, and that meteorological data needed to make the calculations are not readily available. In response, EPA notes that the simple screening techniques described in section 5 of the EPA modeling guideline can be used to determine long-term concentrations for point sources in complex terrain. Mobile sources in complex terrain can be modeled using the area source algorithm in the CDM or ISCLT models. The use of these techniques can be justified because plume rise from areawide mobile source emissions is negligible, significant impacts occur close to the source, and plume impaction on elevated terrain is considered insignificant on an annual basis. More complex situations can be modeled on a case-by-case basis.

It is true that meteorological data in areas with complex terrain are generally sparse. Modeling mobile source effects, as recommended by EPA, however, would be done primarily for areas of high traffic, such as urban areas. In such areas, meteorological data should be readily available. For other cases, preconstruction monitoring of meteorological parameters may be required.

A number of commenters felt that the Prudhoe Bay study conducted in conjunction with this rulemaking did not consider several important modeling issues. The EPA agrees that the Prudhoe Bay area is complex and difficult to model. The Prudhoe Bay model analysis used in this rulemaking, however, was based on existing modeling results presented by applicants in their permit applications, represents the modeling guidance for which permits were issued, and is considered acceptable for the purposes of the rulemaking analysis. No new modeling was performed.

A number of commenters said that the use of the model facility analysis in the technical support document to determine the effect of the increment did not consider three important factors: (1) Many facilities which emit nitrogen oxides are located in complex terrain, although the model facility analysis considered flat terrain impact only; (2) the potential for wide variability in the modeling results needs to be reviewed before any factual forecasts on impacts can be made; and (3) receptors closer than 200 meters from the source were not considered, which is inconsistent with EPA modeling guidance that uses receptors as close as three building heights from a stack.

The EPA's model facility analysis did not use a complex terrain model to determine the effect of the increment because it is difficult to define a "prototypical" complex terrain example that can be used as a substitute for the site-specific analysis required for most facilities located in complex terrain. Because of this, and cost and schedule constraints, the effect of complex terrain was approximated by doubling the maximum ground level concentrations derived from the ISCLT model (see Appendix B of the Technical Support Document, Vol II).

Second, the EPA's model facility analysis considered the variability in modeling results by using the input of 5 years of meteorological data from three National Weather Service (NWS) stations, located in three distinct climatic zones. Urban and rural dispersion parameters were also used to provide a range of conditions. Thus, a wide range of model impact conditions was obtained. The commenter selected the station which showed the highest impact to determine the potential for growth in the commenter's regions. A more accurate method for assessment of growth would be to use a nearby NWS station in that region.

Finally, the EPA's model facility analysis assumed typical building layouts, stack heights, and emissions, based on the new source review data base. The distance to maximum concentrations varied by source type, year and location of meteorological data selected, and urban or rural classification. For the higher emitting utility boiler and gas turbine sources, the distance to maximum impact was beyond 200 meters. Therefore, 200 meters was chosen as a reasonable close-in receptor distance.

H. Costs

Commenters stated that EPA did not consider all of the costs involved in implementing the nitrogen oxides PSD regulations, such as: (1) Retrofit costs in areas where little increment is available; (2) costs of nitrogen oxides control for mobile sources; (3) the costs of controlling hazardous wastes or toxic emissions generated by nitrogen oxides control technologies; and (4) annualized cost impacts as current electric generation reserve capacities are used up and power plant construction programs increase.

The costs of retrofitting nitrogen oxides emission control technologies to existing sources were not considered by EPA in the development of the increment because such controls are not expected to be required because of the increment program. Rather, the program is structured to prevent increment violations in the first place. In theory, existing sources could be called upon to retrofit controls if an increment violation is discovered. In that case, the PSD regulations require that the State develop a plan to correct the violation. The decision on which sources would have to be controlled rests with the State. The possibility of an increment violation would have been much greater if a 1980 baseline date has been established. In any case, all new PSD sources will know before construction begins whether control technologies are needed to avoid increment violations. In addition, the costs of retrofitting controls to modified sources may be higher than for applying controls to new sources, but are not expected to be substantially higher than the costs of controls required by current BACT requirements for new sources.

Mobile source emission control costs were not included in this analysis because mobile sources are not subject to permitting under new source review. The costs of mobile source emission controls are accounted for in the development of regulatory requirements directly applicable to motor vehicles.

The costs of controlling hazardous wastes generated by nitrogen oxide emission control technologies were included in the analysis of the model facilities. These costs included the costs of recycling or disposing of spent catalysts.

The estimates of the cost impact of this increment on the electric utility industry are based on assumptions which may overstate the plant incremental control costs as well as the number of plants subject to control. These assumptions result in high estimated cost impacts for a number of reasons. First, the cost impacts of the increment requirements were estimated as the increase in control costs over the BACT base-case requirements. The BACT levels chosen for the base case, however, were not based on those implemented by the States with the most stringent BACT determinations. Consequently, the analyzed cost differences between BACT and the increment program are potentially overstated.

Further, the estimates of growth in the electric utility industry were based on the growth rate for all PSD sources during the last few years. Eleven percent of the PSD permits in recent years have been for electric utility generating stations. Consequently, of the 250 PSD permits per year expected, based on past experience, for the period 1990–1994, 28 permits per year were assumed to be for utility electric generating stations. Based on historical plant distributions, these PSD permits would be expected to include 15 coal-fired boilers. This corresponds to a combined new capacity of 7500 MW per year, assuming a typical boiler size of 500 MW. Therefore, for the 5-year period 1990–1994, a total of 75 coal-fired utilities with 37,500 MW of new capacity were projected by the EPA study. In contrast, the electric utility industry has projected an increase in coal-fired plant capacity of only 8600 MW during this 5-year period (see U.S. Department of Energy Information Administration, Inventory of Power Plants, 1986). Thus, EPA's analysis has likely overestimated the number of coal-fired steam electric utility facilities expected to be constructed during the time period studied, as well as the total capacity of these facilities.

One commenter used cost impact arguments to advocate nitrogen dioxide

increments that are no less than 45 percent of the NAAQS. The cost impacts of the proposed increments are alleged to: (1) Possibly preclude full development at a reasonable cost for lignite-based electricity generation; (2) result in pass-through of control costs from electricity purchased to consumers of products which use lignite-based electricity as a production input; and (3) affect the ability of firms to compete in foreign markets and, hence, affect the United States' balance of trade.

Promulgation of the proposed PSD increments will not preclude full development of lignite-based electricity generation. Moreover, the added costs of the promulgated increments should reflect the fact that the use of the air resource is not free and should be included in the costs of providing electricity.

One commenter believed the focus of the economic impact analyses should be the competitiveness of the industries affected by the regulation, not price impacts. The commenter also believed a regulatory impact analysis (RIA) may be in order as a result of a comparative analysis showing selective catalytic reduction to have 60 percent greater capital costs than noted in the proposal preamble.

Regarding the focus of the economic impact analysis, most such analyses begin with the potential cost increase. The decision to extend these estimates to examine the distributive consequences of a regulation is a function of the size of the potential cost increase and the requirements for more extensive analysis. The EPA economic impact analysis showed the potential cost increase, both as a percent of product prices and as an absolute annualized cost estimate, to be relatively small and to not warrant an RIA. Thus, the economic impact analysis was not extended to examine distributive effects like competitiveness.

With respect to the need for an RIA, the commenter's comparative cost analysis focuses on retrofit situations with selective catalytic reduction as the control technique. As noted in the response to previous commenters, the retrofit focus is not appropriate. Furthermore, techniques less costly than selective catalytic reduction are often available. Consequently, EPA maintains that an RIA is not required.

Some commenters stated that a price increase of less than 5 percent could be significant to the affected industry. The EPA agrees that potential production cost increases may be important. The ones associated with this regulation, however, are not significant. Both the absolute and the relative sizes of the estimated production cost increases are such that the regulatory action is not classified as major. In particular, for all affected industries estimated, the worst-case fifth year annualized cost increases total less than $64 million in the aggregate. This estimate is on the high side because it does not account for available, less costly control options.

Several commenters, albeit none of them representing State agencies, stated that the cost to the States of administering the program has been underestimated. The costs to State agencies of administering the nitrogen dioxide increment program ($135,000 per year) were calculated by EPA as the incremental cost of examining each applicant's compliance with the nitrogen dioxide increment regulation. Since most sources subject to the PSD regulations for nitrogen oxides are also expected to be subject to the increment requirements for particulate matter and/or sulfur dioxide, the incremental administration costs of implementing the nitrogen dioxide increment requirements should be relatively minor. Using the $135,000 per year cost estimate to calculate average costs per State (about $3,000 per year) is misleading because many States receive no PSD applications for years at a time and would therefore incur no administrative costs for that period.

One commenter's estimate of administrative costs of $10,000,000 per year cannot be effectively evaluated, since the commenter provided no information on the derivation of this figure. However, this estimate is not consistent with EPA's estimate of the costs of administering this increment program.

One commenter said the estimated total national costs to applicants of $400,000 per year is too low for all the time, paperwork, and delays associated with compliance with this regulation. In response to this comment, EPA has reexamined the administrative burden of the increment requirements. In the development of these costs, EPA assumed that 16 hours would be required for the nitrogen dioxide increment consumption analysis associated with each PSD permit application. On reexamination, EPA agrees with the commenter that this is an underestimate based on the inclusion of mobile sources in the analysis. A more accurate estimate of the time typically required for this process was determined to be 60 hours for each application for which a mobile source emissions analysis was needed. The actual hours may be more or less than this estimate, depending on the complexity of the sources and the nature of the area in which the source is located. Based on this revised estimate, it was projected that the total national administrative costs of this regulation to permit applicants will be approximately $855,000 per year, rather than the initial estimate of $400,000 per year.

I. Restrictions on Siting

Several commenter stated that the increment would prevent utility boilers from being constructed near urban areas where they would take advantage of available water supplies and wastewater treatment capacity. The EPA analysis indicated that, for utility power plants located in urban areas, there are control technologies available that will enable these sources to comply with the increment requirements in Class II areas under most anticipated meteorological conditions. It is possible, however, that adverse meteorological patterns or terrain associated with specific sites could make it difficult for a source to comply with the nitrogen dioxide increment, whether that source is a utility boiler or any other nitrogen oxides emissions source (utility boilers would be more likely, however, to have this problem with the short-term sulfur dioxide increments, which have been in effect since 1975, than with the annual nitrogen dioxide increments). This is a possible outcome of any increment system established and is part of the PSD approach to air quality management. In such a case, the source owner would have to review and consider other options available for the siting and design of the source.

One commenter took exception to the EPA claim that the increment will not pose severe constraints on the siting of chemical plants because large new chemical plants are not expected to locate near urban areas. He pointed to the location of many chemical plants at shipping centers near urban areas as contradicting this statement.

The EPA found that the Class II increment of 25 ug/m^3 could impose constraints on the location of large chemical plants in urban areas, but only under adverse meteorological conditions, and only if the chemical plants include significant emissions from kilns, such as those considered in the model facility analysis. Large chemical facilities seeking to locate in urban areas having more moderate meteorological conditions, or having a different configuration of driers, kilns, process heaters, and other nitrogen oxides emissions sources, would be expected to be less constrained by the Class II increment.

It is more likely that chemical manufacturing companies would seek to expand or modify existing facilities in urban areas. In such an instance, the decisions on the siting and design of the modified facility made by the owner or operator of the source could be affected by the increment requirements. As discussed above, this is a possible outcome inherent in the design of the PSD program. It is EPA's conclusion, however, that only in those cases where previous increment consumption has been significant will the increment severely constrain the siting of modification of an industrial facility when compared to other factors, such as the availability of transportation, financing, raw materials, and labor.

One commenter stated that the proposed increments may severely constrain economic growth in rural areas, irrespective of the actual threat to air quality in those areas. The commenter stated that rural Class II areas should be managed differently from urban Class II areas so that the dispersal of growth is encouraged.

In establishing the PSD program, Congress did not distinguish between urban and rural Class II areas, either in terms of the increments for particulate matter and sulfur dioxide or any other aspects of air quality management. The EPA used similar logic when setting the same nitrogen dioxide increments for rural and urban Class II areas. The EPA analyses show that one possible effect of the increment will be the dispersal of industrial growth. Because industrial growth will generally be more rapid in or near urban areas, it is anticipated that any constraints on the siting of industrial facilities resulting from the imposition of an increment would be realized in urban areas first. As a consequence, the increments will create an incentive for the location of industrial facilities outside of urban areas and into rural areas where the increment has not been consumed. This is currently the case for sulfur dioxide and particulate matter. For nitrogen dioxide, emissions reductions from mobile sources are expected to delay this effect. The increments are not, of course, the sole factor shaping decisions about the siting and design of industrial facilities. The EPA expects the nitrogen dioxide increments to accommodate siting of new or modified sources in Class II areas in almost all cases.

J. Ozone

A number of commenters stated that EPA should analyze more thoroughly the relationship between nitrogen dioxide and ozone, the impact of the nitrogen dioxide increments on ozone formation, the potential for acid rain formation, and other environmental issues (e.g., visibility degradation, vegetation damage).

Recognizing that there can be an inverse relationship between ambient nitrogen dioxide levels and ozone levels, a number of commenters said nitrogen dioxide increments should not be applied in ozone nonattainment areas in order to avoid worsening the ozone problems in those areas. One commenter said a nitrogen dioxide increment should be required in an area only if it can be shown that a decrease in ambient nitrogen dioxide will lead to a decrease in ozone levels. Another commenter noted that because of its role in the formation of ozone, nitrogen oxides emissions from new sources are already being reduced to the maximum extent in his area.

The EPA believes it is important to understand that the nitrogen dioxide increments will not reduce current nitrogen dioxide concentrations, but instead place a limit on increases in ambient nitrogen dioxide concentrations. Since it is possible that limiting increases in ambient nitrogen dioxide can also limit reductions in ozone concentrations, EPA conducted an analyses to determine the potential for all of the Class II nitrogen dioxide increment to be consumed in selected urban areas with ozone violations. The objective of the analysis was to assess whether a less stringent increment would be needed to allow (in certain areas) for ozone reduction by increasing nitrogen dioxide availability in the atmosphere. This analysis indicated that all of the proposed Class II nitrogen dioxide increment of 25 $\mu g/m^3$ (annual average) would not be consumed in the urban areas studied, even when emissions growth was projected to the year 2010 using the growth assumptions believed to be most realistic. Consequently, it is not necessary to give further consideration to a less stringent increment on this basis. The analysis has been included in this rulemaking docket.

K. Baseline Date

Comments were solicited on the proposed baseline date of February 8, 1988, and on two alternatives. One of these alternatives was a 1980 baseline date, the date Congress expected the PSD regulations for nitrogen oxides to become effective. Some commenters claimed that a baseline date of 1980 is necessary in order to address the deterioration in air quality that has taken place due to increases in nitrogen oxides emissions since 1980. One commenter pointed out that, although selection of a 1980 baseline date may result in some areas currently being in violation of the increment, these problems can be addressed through the use of the Class II designation.

A 1980 baseline date could affect Class I and some Class II areas differently. As discussed earlier in this notice, the first complete PSD permit application for a major new source or a major modification received after the trigger date establishes the minor source baseline date and the baseline concentration. Once the baseline concentration is set, minor (including mobile) sources can consume or expand increment. As discussed in the proposed rulemaking at 53 FR 3706, for urban Class II areas in which major source permits have been received since 1980, selection of a 1980 baseline date could result in the setting of a higher baseline concentration and, consequently, a higher nitrogen dioxide concentration limit (baseline plus increment) that would be the case for a 1988 baseline date. The EPA urban analysis indicates that, for many urban areas, the decrease in mobile source nitrogen oxides emissions since 1980 has exceeded increases in stationary source nitrogen oxides for the same period. Thus, mobile source emissions reductions either expand the available increment, if the minor source baseline date (and hence the baseline concentration) has been set, or reduce the baseline nitrogen dioxide concentration if it has not. For most rural areas, the major source baseline date and trigger date selections should have little impact. In Class I areas, a studies of the impact of a 1980 baseline indicate that the maximum degradation in Class I areas since 1980 has been less than 1 $\mu g/m^3$.

The EPA agrees that redesignation from Class II to Class III is a possibility for those areas which find themselves in violation of the Class II increment because of a retroactive regulation. However, redesignation to Class III was intended as an avenue for those areas which wish to make the conscious decision to allow more future growth than would be permitted under a Class II increment—not as a remedy where a Class II increment has been (albeit unintentionally) exceeded by the setting of a baseline with a retroactive 1980 date.

On the other hand, several commenters supported the proposed 1988 baseline date, repeating many of the arguments in the preamble to the proposed regulations (53 FR 3705). For example, several commenters pointed out the practical problems with the use of a 1980 baseline date, which would

require the reconstruction of data on the ambient concentration of nitrogen dioxide and emissions of nitrogen oxides in a PSD area as of 1980. They stated that this information may no longer be available, or be difficult to obtain and analyze. Further, the consumption of increment since 1980 would also have to be based on available records of permits and emissions, which may not be complete. The EPA agrees with these commenters that a 1980 baseline date could present severe technical and administrative difficulties. In addition, although it is unlikely, the available historical records may show that some areas would alaready be in violation of the increment at the time of promulgation as the result of emissions growth since 1980. Such violations may require retrofit emissions control technologies to be applied to existing sources in order to bring the area into compliance with the increment. Requiring sources to retrofit emission control devices raises several concerns. First of all, it obviously would be very unfair. The EPA has had BACT requirements for No_x emitters since before 1980. Sources based emission control system decisions on these regulations. A retrofit requirement could essentially undercut the emission control efforts already undertaken. In addition, this retrofitting goes against the grain of the general thrust of the congressional PSD program, namely, that it apply, insofar as new major sources and major modifications are concerned, prospectively and not retrospectively.

Several commenters stated that the baseline date should be the promulgation date or the effective date of the regulation. The rationale, for this recommendation was that the later baseline date would allow States and permit applicants more time to make an orderly transition into the increment program than would the February 1988 baseline.

The EPA does not believe that the February 1988 baseline date poses significant administrative difficulties for State agencies in implementing the inventory and increment requirements of the regulation. States have been aware of the nitrogen dioxide increments since the date of proposal. Although many commenters from industry suggested that this process would be time consuming, it is important to note that comments from the State agencies themselves have not questioned their ability to implement and administer an increment program for nitrogen dioxide based on a February 8, 1988 baseline date.

Setting the baseline date at the date of proposal will prevent the owners or operators of prospective new sources from attempting to avoid the increment requirements by submitting permit applications early. This situation usually occurs when a prospective baseline date is selected. Not only would such action result in some sources not being covered by the program, but dealing with this influx of new source applications would hinder the State agencies in their effort to implement this program and construct emissions inventories.

The EPA believes that the February 8, 1988 baseline represents the best accommodation of the pros and cons provided by the various choices. The EPA has concluded that this baseline is practical, both technically and administratively. A propective baseline date would encourage early application and may provide inadequate environmental protection. Conversely, a retroactive baseline date would be very difficult to implement and would provide no clear environmental benefit because, as explained above, it would expand the available increment in some areas and contract it in others. In addition, it would present the possibility of requiring retrofitting of pollution control equipment, which, in keeping with congressional intent, the PSD program has historically sought to avoid.

L. Emissions Banking

A few commenters expressed their concern about the apparent elimination of the emissions banking system, because the establishment of a nitrogen dioxide increment would exclude previously banked nitrogen oxides emissions credits created by industries for their future expansion. To some extent, this concern is valid. Today's action does limit the use of banked nitrogen oxides emission reduction credits (ERC's) for netting to those ERC's which would affect the nitrogen dioxide increment. This restriction is already included in the definition of "net emissions increases" in determining whether emissions of sulfur dioxide and particulate matter are creditable. The EPA believes that it is appropriate to apply similar restrictions to nitrogen oxides netting transactions to comply with the actual emissions concept in section 169, paragraph (4), of the Act, as described above. Furthermore, EPA wishes to continue its policy of treating all ERC's the same within the new source review (including PSD) program. This means that banked ERC's receive no special consideration in netting transactions over any other ERC's. Banked ERC's must meet all the same requirements as ERC's that are not banked.

M. Administration

Two commenters stated that the proposed nitrogen dioxide increment would place a large burden on the State agencies charged with the responsibility for administering the program. One claim that, for that local agency, the establishment of a nitrogen dioxide increment would result in a large increase in work load without a signficant benefit in local air quality, because of the stringency of their existing BACT program. That agency also predicted that detailed increment consumption analysis will become a routine requirement because projects with nitrogen oxides emissions greater than 40 tons/year will probably exceed the significant impact level. The other commenter stated that the nitrogen oxides regulations will be even more difficult to administer and manage than sulfur dioxide or particulate matter increments, which, this commenter claimed, States have been unsuccessful in implementing to date.

The EPA agrees that the increment program for nitrogen dioxide will result in an increase in the States' work loads, since a new pollutant is being added to the increment consumption analysis. The added work load should be relatively small, however, because the nitrogen dioxide increment consumption analysis can be based on existing administrative structures. The only change to the modeling review procedures will be the need for separate reviews of the baseline concentration and increment consumption data, and verification that the increment has not been exceeded. The ability of State and local agencies to administer this program is evidenced by the fact that only one of the State and local agencies commenting on this regulation expressed concern that they would not be able to administer this program.

IV. Administrative

Docket

The docket is an organized and complete file of all the information considered by EPA in the development of this rulemaking. The docket is intended to allow the public to identify and locate documents so they can effectively participate in the rulemaking process. Along with the statement of basis and purpose of the proposed and promulgated regulations and EPA responses to significant comments, the contents of the docket, except for intraagency review materials, will serve

as the record in case of judicial review (see section 307(d)(7)(A) of the Act).

Under section 307(b)(1) of the Act, judicial review of the actions taken by this notice is available only by the filing of a petition for review in the U.S. Court of Appeals for the District of Columbia Circuit within 60 days of today's publication of this rule. Under section 307(b)(2) of the Act, the requirements that are the subject of today's notice may not be challenged later in civil or criminal proceedings brought by EPA to enforce these requirements.

Paperwork Reduction Act

The information collection requirements contained in this rule have been approved by the Office of Management and Budget (OMB) under the provisions of the Paperwork Reduction Act, 44 U.S.C. 2501 *et seq.* and have been assigned OMB Control Number 2060–0003. The public reporting burden for this collection of information is estimated to vary from 1 to 1000 hours per response, with an average of 60 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Reporting time per respondent will increase slightly as a result of this action. The increase per respondent, however, is insignificant on the average.

Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Chief, Information Policy Branch, PM–223, U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503, marked "Attention: Desk Officer for EPA."

Economic Impact Assessment

Section 317 of the Act requires the Administrator to prepare an economic impact assessment for any regulations under Part C of Title I (relating to PSD of air quality). An economic impact assessment was prepared for the PSD increments for nitrogen dioxide promulgated today. The economic impact assessment is included in Docket A–87–16.

Regulatory Flexibility Act

Pursuant to the provisions of 5 U.S.C. 605(b), I hereby certify that this rule will not have significant economic impact on a substantial number of small business entities (see 46 FR 8709).

List of Subjects

40 CFR Part 51

Air pollution control, Intergovernmental relations, Reporting and recordkeeping requirements, Nitrogen dioxide, State implementation plans.

40 CFR Part 52

Air pollution control, Nitrogen dioxide.

Date: October 7, 1988.

Lee M. Thomas,

Administrator.

For the reasons set out in the preamble, Parts 51 and 52 of Chapter 1 of Title 40 of the Code of Federal Regulations are amended as set forth below:

PART 51—REQUIREMENTS FOR PREPARATION, ADOPTION, AND SUBMITTAL OF IMPLEMENTATION PLANS

1. The authority for Part 51 continues to read as follows:

Authority: Secs. 101(b)(1), 110, 160–169, 171–178, and 301(a) of the Clean Air Act, 42 U.S.C. 7401(b)(1), 7410, 7470–7479, 7501–7508, and 7601(a).

2. In § 51.166, paragraphs (b)(3)(iv), (b)(13)(i), (b)(13)(ii)(*a*), (b)(13)(ii)(*b*) and (b)(14)(i) are revised; paragraph (b)(14)(ii) is redesignated as paragraph (b)(14)(iii) and a new paragraph (b)(14)(ii) is added; paragraphs (b)(15)(i), (b)(15)(ii)(*a*), (f)(1)(v), (f)(4)(i), the last sentence of paragraphs (p)(4) and the tables in paragraphs (c) and (p)(4) are revised; and paragraph (i)(11) and the OMB control number are added to read as follows:

§ 51.166 Prevention of significant deterioration of air quality.

* * * * *

(b) * * *

(3) * * *

(iv) An increase or decrease in actual emissions of sulfur dioxide, particulate matter, or nitrogen oxides which occurs before the applicable minor source baseline date is creditable only if it is required to be considered in calculating the amount of maximum allowable increases remaining available.

* * * * *

(13)(i) "Baseline concentration" means that ambient concentration level which exists in the baseline area at the time of the applicable minor source baseline date. A baseline concentration is determined for each pollutant for which a minor source baseline date is established and shall include:

(*a*) The actual emissions representative of sources in existence on the applicable minor source baseline date, except as provided in paragraph (b)(13)(ii) of this section;

(*b*) The allowable emissions of major stationary sources which commenced construction before the major source baseline date, but were not in operation by the applicable minor source baseline date.

(ii) * * *

(*a*) Actual emissions from any major stationary source on which construction commenced after the major source baseline date; and

(*b*) Actual emissions increases and decreases at any stationary source occurring after the minor source baseline date.

(14)(i) "Major source baseline date" means:

(*a*) In the case of particulate matter and sulfur dioxide, January 6, 1975, and

(*b*) In the case of nitrogen dioxide, February 8, 1988.

(ii) "Minor source baseline date" means the earliest date after the trigger date on which a major stationary source or a major modification subject to 40 CFR 52.21 or to regulations approved pursuant to 40 CFR 51.166 submits a complete application under the relevant regulations. The trigger date is:

(*a*) In the case of particulate matter and sulfur dioxide, August 7, 1977, and

(*b*) In the case of nitrogen dioxide, February 8, 1988.

* * * * *

(15)(i) "Baseline area" means any intrastate area (and every part thereof) designated as attainment or unclassifiable under section 107(d)(1)(D) or (E) of the Act in which the major source or major modification establishing the minor source baseline date would construct or would have an air quality impact equal to or greater than 1 $\mu g/m^3$ (annual average) of the pollutant for which the minor source baseline date is established.

(ii) * * *

(*a*) Establishes a minor source baseline date; or

* * * * *

(c) * * *

Pollutant	Maximum allowable increase (micrograms per cubic meter)
CLASS I	
Particulate matter:	
TSP, annual geometric mean	5
TSP, 24-hr maximum	10

Pollutant	Maximum allowable increase (micrograms per cubic meter)
Sulfur dioxide:	
Annual arithmetic mean	2
24-hr maximum	5
3-hr maximum	25
Nitrogen dioxide:	
Annual arithmetic mean	2.5
CLASS II	
Particulate matter:	
TSP, annual geometric mean	19
TSP, 24-hr maximum	37
Sulfur dioxide:	
Annual arithmetic mean	20
24-hr maximum	91
3-hr maximum	512
Nitrogen dioxide:	
Annual arithmetic mean	25
CLASS III	
Particulate matter:	
TSP, annual geometric mean	37
TSP, 24-hr maximum	75
Sulfur dioxide:	
Annual arithmetic mean	40
24-hr maximum	182
3-hr maximum	700
Nitrogen dioxide:	
Annual arithmetic mean	50

* * * * *

(f) * * *

(1) * * *

(v) Concentrations attributable to the temporary increase in emissions of sulfur dioxide, particulate matter, or nitrogen oxides from stationary sources which are affected by plan revisions approved by the Administrator as meeting the criteria specified in paragraph (f)(4) of this section.

* * * * *

(4) * * *

(i) Specifies the time over which the temporary emissions increase of sulfur dioxide, particulate matter, or nitrogen oxides would occur. Such time is not to exceed 2 years in duration unless a longer time is approved by the Administrator.

* * * * *

(i) * * *

(11) The plan may provide that the permitting requirements equivalent to those contained in paragraph (k)(2) of this section do not apply to a stationary source or modification with respect to any maximum allowable increase for nitrogen oxides if the owner or operator of the source or modification submitted an application for a permit under the applicable permit program approved or promulgated under the Act before the provisions embodying the maximum allowable increase took effect as part of the plan and the permitting authority subsequently determined that the application as submitted before that date was complete.

(p) * * *

(4) * * * If the Federal land manager concurs with such demonstration and so certifies to the State, the reviewing authority may: *Provided,* That applicable requirements are otherwise met, issue the permit with such emission limitations as may be necessary to assure that emissions of sulfur dioxide, particulate matter, and nitrogen oxides would not exceed the following maximum allowable increases over minor source baseline concentration for such pollutants:

Pollutant	Maximum allowable increase (micrograms per cubic meter)
Particulate matter:	
TSP, annual geometric mean	19
TSP, 24-hr maximum	37
Sulfur dioxide:	
Annual arithmetic mean	20
24-hr maximum	91
3-hr maximum	325
Nitrogen dioxide: Annual arithmetic mean	25

* * * * *

(Approved by Office of Management and Budget under the control number 2060–0003)

PART 52—APPROVAL AND PROMULGATION OF IMPLEMENTATION PLANS

1. The authority citation for Part 52 continues to read as follows:

Authority: 42 U.S.C. 7401–7642.

2. In § 52.21, paragraphs (b)(3)(iv), (b)(13)(i), (b)(13)(ii)(*a*), (b)(13)(ii)(*b*) and (b)(14)(*i*) are revised; paragraph (b)(14)(ii) is redesignated as paragraph (b)(14)(iii) and a new paragraph (b)(14)(ii) is added; paragraphs (b)(15)(i), (b)(15)(ii)(*a*), (f)(1)(v), (f)(4)(i), the last sentence of paragraph (p)(5) and the tables in paragraphs (c) and (p)(5) are revised and paragraph (i)(12) and the OMB control number are added to read as follows:

§ 52.21 Prevention of significant deterioration of air quality.

* * * * *

(b) * * *

(3) * * *

(iv) An increase or decrease in actual emissions of sulfur dioxide, particulate matter, or nitrogen oxides which occurs before the applicable minor source baseline date is creditable only if it is required to be considered in calculating the amount of maximum allowable increases remaining available.

* * * * *

(13)(i) "Baseline concentration" means that ambient concentration level which exists in the baseline area at the time of the applicable minor source baseline date. A baseline concentration is determined for each pollutant for which a baseline date is established and shall include:

(*a*) The actual emissions representative of sources in existence on the applicable minor source baseline date, except as provided in paragraph (b)(13)(ii) of this section;

(*b*) The allowable emissions of major stationary sources which commenced construction before the major source baseline date but were not in operation by the applicable minor source baseline date.

(ii) * * *

(*a*) Actual emissions from any major stationary source on which construction commenced after the major source baseline date; and

(*b*) Actual emissions increases and decreases at any stationary source occurring after the minor source baseline date.

(14)(i) "Major source baseline date" means:

(*a*) In the case of particulate matter and sulfur dioxide, January 6, 1975, and

(*b*) In the case of nitrogen dioxide, February 8, 1988.

(ii) "Minor source baseline date" means the earliest date after the trigger date on which a major stationary source or a major modification subject to 40 CFR 52.21 or to regulations approved pursuant to 40 CFR 51.166 submits a complete application under the relevant regulations. The trigger date is:

(*a*) In the case of particulate matter and sulfur dioxide, August 7, 1977, and

(*b*) In the case of nitrogen dioxide, February 8, 1988.

* * * * *

(15)(i) "Baseline area" means any intrastate area (and every part thereof) designated as attainment or unclassifiable under section 107(d)(1)(D) or (E) of the Act in which the major source or major modification establishing the minor source baseline date would construct or would have an air quality impact equal to or greater than 1 $\mu g/m^3$ (annual average) of the pollutant for which the minor source baseline date is established.

(ii) * * *

(*a*) Establishes a minor source baseline date; or

* * * * *

(c) * * *

Pollutant	Maximum allowable increase (micrograms per cubic meter)
CLASS I	
Particulate matter:	
TSP, annual geometric mean	5
TSP, 24-hr maximum	10
Sulfur dioxide:	
Annual arithmetic mean	2
24-hr maximum	5
3-hr maximum	25
Nitrogen dioxide: Annual arithmetic mean	2.5
CLASS II	
Particulate matter:	
TSP, annual geometric mean	19
TSP, 24-hr maximum	37
Sulfur dioxide:	
Annual arithmetic mean	20
24-hr maximum	91
3-hr maximum	512
Nitrogen dioxide: Annual arithmetic mean	25
CLASS III	
Particulate matter:	
TSP, annual geometric mean	37
TSP, 24-hr maximum	75
Sulfur dioxide:	
Annual arithmetic mean	40
24-hr maximum	182
3-hr maximum	700
Nitrogen dioxide: Annual arithmetic mean	50

* * * * *

(f) * * *

(1) * * *

(v) Concentrations attributable to the temporary increase in emissions of sulfur dioxide, particulate matter, or nitrogen oxides from stationary sources which are affected by plan revisions approved by the Administrator as meeting the criteria specified in paragraph (f)(4) of this section.

* * * * *

(4) * * *

(i) Specify the time over which the temporary emissions increase of sulfur dioxide, particulate matter, or nitrogen oxides would occur. Such time is not to exceed 2 years in duration unless a longer time is approved by the Administrator;

* * * * *

(i) * * *

(12) The requirements of paragraph (k)(2) of this section shall not apply to a stationary source or modification with respect to any maximum allowable increase for nitrogen oxides if the owner or operator of the source or modification submitted an application for a permit under this section before the provisions embodying the maximum allowable increase took effect as part of the applicable implementation plan and the Administrator subsequently determined that the application as submitted before that date was complete.

(p) * * *

(5) * * * If the Federal land manager concurs with such demonstration and he so certifies, the State may authorize the Administrator: *Provided,* That the applicable requirements of this section are otherwise met, to issue the permit with such emission limitations as may be necessary to assure that emissions of sulfur dioxide, particulate matter, and nitrogen oxides would not exceed the following maximum allowable increases over minor source baseline concentration for such pollutants:

Pollutant	Maximum allowable increase (micrograms per cubic meter)
Particulate matter:	
TSP, annual geometric mean	19
TSP, 24-hr maximum	37
Sulfur dioxide:	
Annual arithmetic mean	20
24-hr maximum	91
3-hr maximum	325
Nitrogen dioxide: Annual arithmetic mean	25

* * * * *

(Approved by Office of Management and Budget under the control number 2060–0003.)

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